POLICY OR PRECEDENT

(XVIII Abn Corps and Ft Bragg Memo 25-50)

1. SUBJECT	**2. MASTER POLICY NO.**
XVIII Airborne Corps Policy for Prevention of Environmental Casualties (Heat and Cold)	21

3. ORIGINATOR	**4. PHONE NUMBER**	**5. DATE ESTABLISHED**
AFZA-MD	396-5772	10 September 2001

6. SYNOPSIS: (if more space is needed, use reverse side.)

1. PURPOSE. This policy provides guidance to reduce environmental casualties, prevent environmental injuries, defines environmental casualties, and establishes environmental casualty reporting procedures for personnel assigned or attached to XVIII Airborne Corps.

2. REFERENCES.

a. Army Regulation 40-501, Standards of Medical Fitness, 21 February 1998.

b. Army Regulation 190-40w/FORSCOM Supplement 1 Serious Incident Reporting, 30 November 1993.

c. Army Regulation, Wear and appearance of Army Uniforms and Insignia, 01 September 1992.

d. Technical Bulletin MED 81, Cold Injury.

e. Technical Bulletin MED 507, Prevention, Training and Control of Heat Injury.

f. Field Manual 21-10, Field Hygiene and Sanitation, 21 June 2000.

g. Field Manual 21-1, Foot Marches, 01 June 1990.

h. Manual 21-20w/change 1, Physical Fitness Training.

i. Technical Circular 21-3, Soldier's Handbook For Individual Operations and Survival in Cold-weather Areas, 17 March 1986.

j. Memorandum, Department of the Army, DASG-HSZ, 1 May 2000, Subject: OTSG Policy on Medical Screening for Dietary Supplements.

k. XVIII Airborne Corps and Fort Bragg Regulation 385-10, Safety Program Requirements, 11 October 1995.

(CONTINUED)

7. TYPE POLICY

- [X] **NEW**
- [ ] **CHANGE**
- [ ] **REVOCATION**

8. IDENTIFY POLICY AFFECTED

None

9. LAST REVIEWED

DATE	REVIEWING OFFICER	ORGANIZATION	INITIALS

10. APPROVED:

STANLEY A. McCHRYSTAL, Brigadier General, GS, Chief of Staff

11. DIRECTIVE ON WHICH BASED (Show date, subject, and origin.)

12. DISTRIBUTION	**13. DATE PUBLISHED**
A, D, E, & F	

l. XVIII Airborne Corps Command Policy Statement on Risk Management.

m. XVIII Airborne Corps Watch Noncommissioned Officers (NCO) Serious Incident Report Checklist.

3. **DEFINITIONS.**

a. **Environmental Casualty.** Presumptive classification of an individual that has experienced a change in their health status due to environmental conditions (heat or cold) and/or activity.

b. **Environmental Injury.** Soldiers with these conditions may have incurred a serious injury and will be referred to a medical evaluation board.

(1) **Cold Injury.** Cold casualty that has been medically validated with frostbite, hypothermia or trench foot.

(2) **Heat Injury.** Heat casualty that has been medically validated with heat stroke or multiple episodes of heat exhaustion (three or more in less than 24 months).

c. **Exertional Heat Casualty.** Nontraumatic illness generally presenting as staggering or collapse during or immediately following strenuous physical activity (e.g., running, road marching). Symptoms vary and include dizziness, fatigue, headache, visual abnormalities, thirst, muscle cramps, gastro intestinal distress, and the individual may exhibit signs of confusion, disorientation, or in extreme cases loss of consciousness.

d. **Dietary Supplement.** General term for a variety of non-prescription products: vitamins, minerals, amino acids, proteins, botanicals (including herbal preparations), glandular extracts and other animal products. Under current law, manufacturers of dietary supplements are not required to provide proof of safety or efficacy to the Food and Drug Administration prior to marketing.

e. **Serious Incident.** Any actual or alleged incident, accident, misconduct, or act primarily criminal in nature, that because of its nature, gravity, potential for adverse publicity, or potential consequences warrants timely notice to HQDA through FORSCOM, reference 2b. The death of an environmental casualty is a serious incident.

f. **Significant Event.** An event of Command interest that is not a serious incident (e.g., environmental casualty(s) from a high risk event).

g. **High Risk Event.** For the purposes of this regulation a high-risk event is a timed 20 km road march or runs greater than 5 miles.

h. **Cluster of Environmental Casualties.** A grouping of two or more heat/cold casualties resulting from a common event or activity.

4. **GENERAL.** Prevention of environmental casualties is a command responsibility, involving: the education of leaders/supervisors; the employment of physical fitness training principles in references 2g & 2h; and management of activities according to weather conditions. Practical, yet effective risk reduction measures must be initiated by leaders to minimize risks. Despite all efforts, environmental casualties will occur in military operations, however Commanders/Supervisors should never allow a casualty to become an environmental injury.

5. **RESPONSIBILITIES.**

a. Commanders and supervisors at all levels will:

(1) Establish physical conditioning programs in accordance with (IAW) references 2g & 2h, adapted to the operational environment, that enable soldiers to attain a level of physical fitness in a gradual and progressive manner.

(2) Safeguard the health of all personnel through active supervision and discipline, especially in hot and cold weather.

(3) Develop an internal policy, providing guidance to all personnel on the prevention and management of heat and cold casualties in garrison and field environments.

(4) Train all personnel in the cold/heat casualty recognition, prevention, risk reduction measures, and basic first aid. Annual classes will be conducted prior to the onset of hot and cold seasons. Additional specific training may be required for hot and cold weather operations.

(5) Monitor the employment of heat and cold casualty prevention countermeasures.

(6) Establish procedures for the collection and dissemination of the heat index during the hot environment and the weather forecast, temperature, wind speed, and wind chill factor during the cold environment.

(7) Utilize Unit Field Sanitation Team or other trained personnel to monitor the heat stress index at training/work location.

(8) Report all suspected or confirmed occurrences of environmental casualties as described in paragraph 7.

(9) Keep personnel informed of the temperature, wind chill, and/or heat stress index, along with associated work rest-cycles and hydration quantities to minimize casualties. Provide guidance for the continuation and/or modification of training or the mission to avoid unnecessary risk to soldiers.

(10) Review medical and physical readiness of soldiers and acclimatization status (see Appendix B) as part of risk assessment procedures for all training and operational activities.

b. Command Surgeons will:

(1) Monitor environmental injury rates in their command and advise commanders on risk reduction measures.

(2) Ensure environmental casualties are reported as required in paragraph 7, perform medical staff analysis of significant events, and incorporate lessons learned into standard operating procedures.

(3) Conduct a medical investigation of the risks and risks reduction measures surrounding reported incidents and back brief the Corps Surgeon’s Office on the results of the investigation. Medical personnel should work closely with safety personnel to ensure appropriate medical advice is rendered during environmental injury investigations.

c. Soldiers will maintain appropriate physical conditioning, drink appropriate amounts of water, refrain from use of unnecessary medications/dietary supplements, and inform leaders of difficulties/concerns when needed to protect his/her own or others’ safety.

6. **RISK REDUCTION.** Leaders will incorporate environmental conditions in their risk assessments and update as weather conditions change. Leaders should make a re-assessment 1-2 hours prior to strenuous events such as 20 km timed road marches or runs greater than 5 miles. High-risk events will exceed standard work-rest guidelines (reference 2f) and must therefore be handled as high risk regardless of weather. As soon as the first environmental casualty occurs, commanders must assess the status of the whole unit. Presented in Appendix A is

environmental casualty risk reduction measures that commanders can implement. Risk reduction measures that should be considered for high-risk events can be found in Appendix B. Supporting preventive medicine personnel can provide additional guidance on risk reduction measures.

7. **CASUALTY REPORTING PROCEDURES.** These reporting requirements are not intended to replace safety reporting requirements. Environmental casualties occurring in high-risk events resulting in death or hospitalization are reportable events in XVIII Airborne Corps. Units will report environmental causalities to the XVIII Airborne Corps G3, Current Operations Watch Team using the Significant Event/Serious Incident Reporting process. The Current Operations Watch Team will then notify the Deputy Corps Surgeon's Office, 396-5772/5704/6516. After duty hours the Current Operations Watch Team will forward this information to the 44th Medical Brigade (Med Bde) Staff Duty Officer, 396-4798/9855.

a. Serious Incident Reporting (SIR) of an Environmental Casualty. Death from exposure to environmental conditions (heat or cold) is a Category II reportable serious incident and hospitalized environmental casualty(s) from a high-risk event are a Category III reportable serious incident. SIRs are telephonically submitted to the XVIII Airborne Corps G3, Current Operations Watch Team, DSN 236-0371/0372 or 910-396-XXXX IAW references 2b & 2m.

b. Significant Event Reporting of an Environmental Casualty. Clusters of environmental causalities from high risk events regardless of hospitalization or not will be reported as a significant event to XVIII Airborne Corps G3, Current Operations Watch Team.

c. Information required for reporting environmental casualties:

(1) Name, social security number (SSN), rank, unit contact person/number, and unit of casualty.

(2) Category/disposition of patient (hospitalized, quarters, return to duty). Severity of hospitalization (SI or VSI), when applicable.

(3) Diagnosis (presumed or confirmed). Clinical diagnoses of an environmental injury (heat stroke, frostbite, trench foot or hypothermia) may take up to 48 hours to medically confirm.

(4) Time/date group of incident/occurrence.

(5) Circumstances leading to the environmental casualty.

d. Within 48 hours following the initial casualty report a follow-up report on the clinical diagnosis confirming the type of environmental injury and the patients status will be provided to the XVIII Airborne Corps Surgeon's Office by the Command Surgeon during duty hours. After duty hours this information will be provided to the Staff Duty Officer, 44th Med Bde, DSN 236-4798/9855 or 910-396-XXXX. If the unit does not have a Command Surgeon, the XVIII Airborne Corps Surgeon's Office will be responsible for the follow-up report.

8. **DISPOSITION OF SOLDIERS WITH ENVIRONMENTAL INJURY.** Soldiers experiencing environmental injuries can be seriously injured, which may result in permanent profile or separation from the military. Information on Medical Evaluation Board (MEB) and Physical Evaluation Board (PEB) can be found in AR 40-501: essential information on board functions is presented below.

a. Heat Injury.

(1) Heat Stroke. Soldiers identified, with heatstroke will be referred to an MEB IAW AR 40-501. If the MEB determines the soldier is able to fully recover then the MEB will recommend trial duty with P-3 (T). If after 3 months the soldier has not manifested any heat intolerance, profile will be modified to P-2 (T). If the soldier has no heat intolerance, including a season of significant exposure to heat stress conditions, the soldier will resume normal activities without referral to an PEB. If the soldier exhibits any evidence of significant heat intolerance during the period of profile, the case will be referred to an PEB.

(2) Heat Exhaustion. A soldier with heat exhaustion is not classified as having a heat injury unless this is a recurrent episode (3 or more in less that 24 months). A soldier experiencing a single episode will not be referred to an MEB. Recurrent episodes will be referred for a complete medical evaluation. If no remediable factor causing heat exhaustion is identified then the soldier will be referred to an MEB.

b. Cold Injury.

(1) Frostbite. Soldiers with first degree frostbite after clinical healing will be given a P-2(P) permanent profile permitting the use of extra cold weather protective clothing, including non-regulation items, to be worn under authorized outer garments. Soldiers with frostbite more than first degree will be given a P-3(T) temporary profile, renewed as required, for the duration of the cold

season restricting them from any exposure to temperatures below 32°F and from any activities limited by the injury. They are allowed to use all of the protective equipment for the remainder of the cold season. After the cold season, soldiers will be reevaluated and, if appropriate, given P-2(P) permanent profile as previously described above.

(2) Trenchfoot. Trench foot is a very serious nonfreezing cold injury that develops when the skin of the feet is exposed to moisture and cold for prolonged periods (12 hours or longer). Soldiers with residual symptoms or significant tissue loss after healing from trench foot (consequences of prolonged cold immersion of an extremity) will be referred to an MEB.

(3) Accidental Hypothermia. Defined as clinically significant depression of the body temperature due to environmental cold exposure. Soldiers with significant symptoms of cold intolerances or a recurrence of hypothermia after an episode of accidental hypothermia will be referred to an MEB.

APPENDIX A
SUGGESTED ENVIRONMENTAL CASUALTY RISK REDUCTION MEASURES

a. Prevention of Heat Casualties. Information on heat casualty identification and basic first aid can be found in reference 2e.

(1) Physical Fitness. Physical fitness is the single most important factor in preventing heat casualties. Commanders are responsible for the physical fitness of their soldiers and the conditioning program required to optimize fitness. Physical fitness must be compared with the task to be accomplished (duration, intensity, and load). Heat illness occurs primarily when a soldier tries to exceed his/her current physical and medical capability. Soldiers without demonstrated appropriate levels of physical fitness (e.g., new soldiers) must undergo progressive physical conditioning IAW references 2g & 2h before attempting strenuous physical events in hot weather.

(2) Water replacement. Adequate water intake is an important factor in preventing heat casualties. Fluid replacement guidelines in reference 2f will be used to estimate the drinking water requirements for personnel based on activity and heat category. Drinking is the soldier's personal responsibility, but it is the commander's responsibility to supervise and ensure the soldier is hydrating in proper amounts. Overhydration (>1.5 quarts per hour, or >12 quarts per day) must also be avoided.

(3) Acclimatization. Acclimatization is necessary to permit the body to reach and maintain efficiency in its cooling process. Acclimatization begins with the first exposure and is fairly well developed within 4-5 days in highly fit individuals, with almost complete acclimatization in two weeks. During acclimatization work should be accomplished during the cooler hours of the day while alternating work with rest periods. First day exposure should not exceed moderate hot conditions [less than 85°F Wet Bulb Globe Temperature (WBGT)], and should allow rest periods in shade for at least five minutes, alternating with no more than 25 minutes of easy/moderate work in the heat. Continued moderate work in the heat for 2-4 hours per day will achieve maximum acclimatization. The level of work in the heat can be slowly progressed up to the limits in the work-rest chart at the end of 2 weeks. Acclimatization does not reduce, but may increase, water requirements, and it is nullified by sleep loss, dehydration, and certain medications/dietary supplements.

(4) Medical condition. Soldiers who are more prone to heat casualties should be closely monitored and perhaps limited in level of activity. These include those who are overweight, dieting, have

chronic medical conditions, are taking medications (such as antihistamines), have had recent illness (e.g., fever, acute infections, immunization reactions, vomiting, or diarrhea), have had alcohol intake within past 24 hours, use ephedrine alkaloid- or hormone-containing dietary supplements, or have been past heat casualties. Medical consultation should be utilized to determine appropriate levels of physical activity for these personnel.

(5) Replacement of salt loss. Salt replacement in most cases is adequately accomplished through consumption of all meals. Salt requirements decrease with acclimatization. Use of salt tablets is not permitted. When heavy sweating may exceed 60-90 minutes, consider consuming a carbohydrate-electrolyte beverage similar to half-strength sports drinks (e.g., during this period alternate between drinking a sports drink and water).

(6) Schedule modification. Work schedules must be modified to fit the environmental condition and the physical/medical fitness of the soldier. Alternating work and rest periods IAW reference 2f will optimize individual productivity during hot weather. Perform heavy work in the cooler hours of the day, such as early morning or late evening. Consider holding formations for shorter periods and out of direct sunlight during hot weather. March soldiers over grass rather than pavement. Conduct field lectures and break periods in the shade or in well-ventilated areas.

(7) Clothing. Exceptions to the prescribed wear of uniforms may be authorized to preserve soldier health. Clothing and equipment should be worn so as to permit free circulation of air between the uniform and the body. Clothing should be loose fitting at the neck, wrists, and ankles. With Command permission, uniform modifications such as rolling up sleeves, unbuttoning or removing the battle dress uniform (BDU) shirt, or unblousing the BDU pants may be implemented. Reduction in layers of clothing or removal of Kevlar assists in reducing body temperature. MOPP gear and body armor are especially heat-retentive (add 10° to the WBGT reading).

(8) Diuretics, dietary supplements, and medications. Caffeine and alcoholic beverages have diuretic properties, which increase the risk of dehydration. Some medications and have been associated with increased heat injury. Personnel using antihistamines, cold preparations, or blood pressure medications are at higher risk for becoming a heat casualty (see reference 2j). Soldiers taking any medications or dietary supplements shall inform their supervisors, and be directed to seek medical clearance.

b. Prevention of Cold Casualties. Proper use of preventive measures, which are inspected and enforced by all leaders, will markedly reduce the incidence of cold casualties. Weather conditions, such as temperature, humidity, wind velocity and precipitation affect the loss of body heat. Leaders must therefore adjust activities and the uniform of their soldiers as the environmental conditions change. Information on identification and basic treatment of cold casualties can be found in reference 2d.

(1) Weather. The wind-chill phenomenon is related to the heat loss of unprotected body surfaces-faces or ears (i.e., wind has a cooling effect on exposed skin). Wind chill effect chart can be found in reference 2f. Historically, a large number of cold injuries occur after sudden weather changes. During the cold season commanders should obtain frequent weather forecasts of wind and temperature. Leaders can use the wind chill chart to evaluate this information.

(2) Type of activity. The incidence of cold injury varies greatly according to activity and environmental conditions. Units in reserve or in rest areas generally have fewer cases. Units in holding missions or on static defense (missions with little or no activity) have greater exposure potential and thus, an increase risk for sustaining cold casualties. It is important for unit commanders to institute periodic vigorous activity when ambient temperatures reach -20°F or below. This exercise should not be carried to the point of perspiration.

(3) Clothing. The Extended Cold Weather Clothing System (ECWCS) will provide protection of the head, torso, and extremities from 40°F to -60°F. The ensemble uses the layering principal to conserve body heat. Loose layers of clothing with air space between them, under an outer wind- and water-resistant garment, provide maximum protection. The ensemble is generally comprised of four layers: (1) Polypropylene undershirt/drawers; (2) Fiber pile shirt/pants; (3) Polyester batting coat and trouser liner; and (4) Extended Cold Weather (i.e., Gortex) camouflage parka and trousers. Further information on suggested clothing layering for physical training and work can be found in Appendix C.

(4) Previous cold injury. A previous cold injury of significant extent (frostbite or trench foot) increases the individual's risk of subsequent cold injury, not necessarily involving the body part previously injured. Recurrent cold injuries tend to be much more extensive, with increased tissue damage.

(5) Activity. Too much or too little activity may contribute to cold injury. Over activity causes perspiration, which can lead to

dehydration and sweat trapped in clothing, reducing the insulating quality of the clothing. Conversely, immobility generates less body heat resulting in cooling, especially of extremities and parts of the body in contact with the ground or other surfaces. Establish shelters in locations accessible to personnel exposed to cold, where they can rest, warm-up and dry out. Rotate troops as often as possible when they are assigned relatively stationary duties such as guard duty in defense positions or at check points.

(6) Drugs and medication. Physicians should advise patients of any adverse effects on peripheral circulation or sweating when prescribing drugs and medications in cold climates.

(7) Alcohol affects peripheral blood flow, increases body heat loss, suppresses shivering, and impairs judgment. The physiological dangers of hypothermia and frostbite are greatly increased when under its influence.

APPENDIX B

SUGGESTED RISK REDUCTION MEASURES FOR TIMED ROAD MARCHES AND RUNS GREATER THAN 5 MILES

Since timed road marches under combat loads and runs greater than 5 miles exceed the definition of hard work in reference 2f, the inherent risk will always be assumed to remain high regardless of the environmental conditions or mitigating actions. In accordance with reference 2l, any operation where the residual risk is high, the first O-6 commander in the chain of command must approve the operation. Casualties can be minimized by:

1. Commanders promoting physical conditioning programs that follow guidelines set forth in FM 21-18 and FM 21-20. Compliance with the road march conditioning program will, after a 30-day preparatory training period, produce a soldier who can march 12 miles in less than 3 hours loaded to about 60 pounds, when energy expenditure at that rate would cause exhaustion in 2 ½ hours for soldiers who have not received special conditioning training.

2. Adequate hydration and consumption of well-balanced meals the day prior to event. Individuals should consume recommended amounts of water (see reference 2f) the day prior to (evening) and in the morning (1-2 hours prior to event).

3. Establishing a re-hydration plan for the event, with strategically placed water points every two-miles.

4. Limiting strenuous physical activity and heat stress exposure during the entire day prior to the event.

5. Setting the start time for the event during the coolest part of the day to maximize exposure to the lowest heat category.

6. Modifying uniform to enhance cooling such as; unblousing BDU pants, unbutton BDU top, or removal and carry of helmet (kevlar).

7. Monitor the heat index along the event route. Ensure communication of heat index updates can be communicated between monitors and leadership.

8. Ensuring participants are actually consuming appropriate amounts of water (usually 1 quart per hour but no more than 1.5 quarts per hour) along the route. (EXAMPLE: During road marches have soldiers slightly open and invert their canteen to validate consumption. Soldiers who have water remaining in their canteen at checkpoints will

consume remaining water prior to continuation of event. Persons not consuming sufficient water should be removed from the event.)

9. Avoiding the use of a dietary supplement, see paragraph 6a(8).

10. Active surveillance along the route of the event by medical personnel or combat lifesavers trained in the recognition of heat injury signs stationed along the event route.

11. Medically evaluating all participants at checkpoints to identify signs of confusion, disorientation, etc. Trained medical providers will remove soldiers displaying signs of heat injury from the course for further evaluation before being allowed to continue. Confused or disoriented personnel will be removed. Rectal temperatures up to 104°F are common without heat stroke, but personnel with a rectal temperature greater than 105°F will be removed.

12. Removing participants who are more than six minutes behind the pace setter (in a 12-mile road march) at the halfway point.

13. Having onsite medical support and transportation readily available. Medical support will include the capability for managing mass casualties with ACLS, active cooling, intravenous (IV) re-hydration, and immediate evacuation to a hospital. Treatment should begin in the field and continue during transport to the hospital.

APPENDIX C
LEADER'S GUIDE FOR THE PREVENTION OF COLD INJURIES

LEADER'S GUIDE
FOR THE PREVENTION OF COLD INJURIES DUE TO EXPOSURE TO TEMPERATURES BELOW 50° F

Information is provided to assist leaders in risk decision-making and control development as part of the risk management process. Risk decisions and controls should be developed for all training. Leaders must ensure these risk decisions/controls are implemented into unit training plans and that training is supervised. These guidelines are generalized for worldwide use. Commanders of units with extensive extreme cold weather training and specialized equipment may opt to use less conservative guidelines.

Work Intensity	Little Danger	Increased Danger	Great Danger
High Digging foxhole, running, marching with rucksack, making or breaking bivouac	Increased surveillance by small unit leaders; black gloves optional – mandatory below 0° F; increased hydration	ECWCS or equivalent; Mittens with liners; no facial camouflage; exposed skin covered and kept dry; rest in warm, sheltered area; vapor barrier boots below 0° F	Postpone non-essential training; essential tasks only with <15 minute exposure; work groups of no less than 2; cover all exposed skin
Low Walking, marching without rucksack, drill and ceremony	Increased surveillance; cover-exposed flesh when possible; mittens with liner and no facial camouflage below 10° F; full head over below 0° F. Keep skin dry – especially around nose and mouth.	Restrict Non-essential training; 30-40 minute work cycles with frequent supervisory surveillance for essential tasks. See above.	Cancel outdoor training
Sedentary Sentry duty, eating, resting, sleeping, clerical work	See above; full head cover and no facial camouflage below 10° F; cold-weather boots (VB) below 0° F; shorten duty cycles; provide warming facilities	Postpone non-essential training; 15-20 minute work cycles for essential tasks; work groups of no less than 2 personnel; no exposed skin	Cancel outdoor training
	RECOMMENDED	**CLOTHING**	
FIELD UNIFORM	Polypro (Tops & Bottom) ECWCS** (T&B) Balaclava Trigger Finger Mittens Gore-Tex Boots*	Polypro (T&B) Fiber pile (T&B) ECWCS** (T&B) Balaclava/Pilecap ECW Mittens Boots ECW (type I)	Polypro (T&B) Fiber pile (T&B) Polyester batting Coat and trouser liner ECWCS** (T&B) Balaclava/Pilecap ECW Mittens Boots ECW (type II)
PT UNIFORM	PFU Sweats (T&B) Neck Gator Black Knit Cap Black Gloves w/inserts	PFU Sweats (T&B) Polypro (T&B) Black Knit Cap Neck Gator Balaclava Trigger Finger Mittens	PFU Sweats (T&B) Polypro (T&B) Black Knit Cap Neck Gator Balaclava Trigger Finger Mittens

* GORE-TEX BOOTS = Matterhorn/Rocky Mountain/or similar GORE-TEX insulated leather boots
** ECWCS = Extended Cold Weather Clothing System (GORE-TEX)